



UND-99-02-D1

Amended Claims

1. A method of inhibiting blood supply to a tumor, comprising the steps of:

(a) locating an artery which carries major blood supply to the tumor, said artery being one that is proximate to the tumor ;

and

(a) intra-arterially injecting into the located artery a predetermined quantity of a polyunsaturated fatty acid in the form of a solution of at least one polyunsaturated fatty acid chosen from linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid and cis-parinaric acid and one or more anti-angiogenic substance(s).

2. A method as in claim 1 [including] comprising the step of causing antiangiogenic action, wherein said polyunsaturated fatty acid is in the form of a lithium salt solution and wherein said predetermined quantity of the fatty acid is generally in a range of 0.5 mg to 50 gm.

3. A method as in claim 1 wherein step (b) comprises intra-arterially injecting a predetermined quantity of a polyunsaturated fatty acid in the form of a [derivative] mixture of a polyunsaturated fatty acid including at least one predetermined anti-angiogenic substance to the extent of 1 to 1000 mg/kg/ body weight, said [derivative] mixture of polyunsaturated fatty acid [being] comprising a substance chosen from glycerides, esters, free acids, amides, phospholipids and salts.
4. A method as in claim 1, wherein the polyunsaturated fatty acid is in the form of a lithium salt solution of gamma-linolenic acid and eicosapentaenoic acid/docosahexaenoic acid, including a predetermined quantity of said anti-angiogenic substance chosen from :
[Angiostatin®, Endostatin®] an anti-angiogenic substance naturally occurring as a protein, platelet factor-4, TNP-470, thalidomide, interleukin-12, and metalloprotease inhibitors, and a predetermined anti-cancer drug.
5. A method of treating a tumor and facilitating visualization of remission of the tumor responsive to treatment, comprising :

- (a) locating an artery which carries a major portion of blood supply to said tumor and is adjacent to the tumor;
- (b) obtaining an initial radiographic image of the tumor region;
- (c) injecting into the located artery a mixture of at least
 - (i) an oily lymphographic agent as a carrier containing one or more of anti-angiogenic substance(s)
 - (ii) a lithium salt solution of at least one polyunsaturated fatty acid chosen from linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid and cis-parinaric acid
- (d) obtaining second and subsequent radiographic images of the tumor region after predetermined lapses of time; and
- (e) comparing the initial radiographic image with the second and subsequent images to assess an extent of remission of the tumor.

6. A method as in claim 5 wherein step (c) comprises intra-arterially

injecting a mixture containing elements chosen from : an anti-angiogenic substance naturally occurring as a protein [chosen from Angiostatin®, Endostatin®] , platelet factor-4, TNP-470, thalidomide, and interleukin-12, causing anti-angiogenic action by inhibiting the blood supply to the tumor, wherein further the oily lymphographic agent acts as a carrier for said anti-angiogenic substance(s), and also for the lithium salt solution of predetermined quantities of gamma-linolenic acid, eicosapentaenoic acid and/or docosahexaenoic acid.

7. A method of treating a cancerous tumor, comprising

(a) using an oily lymphographic agent as a carrier for

- (i) at least one polyunsaturated fatty acid chosen from a lithium salt of at least one of linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid, and cis-parinaric acid
- (ii) one predetermined anti-cancer drug, and anti-angiogenic substance(s) which are mixed with polyunsaturated fatty acids or co-valently linked to fatty acids

(b) administering a predetermined quantity of selected fatty acids and predetermined anti-angiogenic substance in the oily lymphographic agent as a carrier.



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1. A method of inhibiting blood supply to a tumor, comprising the steps of:

(a) locating an artery which carries major blood supply to the tumor, said artery being one that is proximate to the tumor ; and

(a) intra-arterially injecting into the located artery a predetermined quantity of a polyunsaturated fatty acid in the form of a solution of at least one polyunsaturated fatty acid chosen from linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid and cis-parinaric acid and one or more anti-angiogenic substance(s).

2. A method as in claim 1 comprising the step of causing antiangiogenic action, wherein said polyunsaturated fatty acid is in the form of a lithium salt solution and wherein said predetermined quantity of the fatty acid is generally in a range of 0.5 mg to 50 gm.

3. A method as in claim 1 wherein step (b) comprises intra-arterially injecting a predetermined quantity of a polyunsaturated fatty acid in the form of a mixture of a polyunsaturated fatty acid including at least one predetermined anti-angiogenic substance to the extent of 1 to 1000 mg/kg/ body weight, said mixture of polyunsaturated fatty acid comprising a substance chosen from glycerides, esters, free acids, amides, phospholipids and salts.
4. A method as in claim 1, wherein the polyunsaturated fatty acid is in the form of a lithium salt solution of gamma-linolenic acid and eicosapentaenoic acid/docosahexaenoic acid, including a predetermined quantity of said anti-angiogenic substance chosen from: an anti-angiogenic substance naturally occurring as a protein, platelet factor-4, TNP-470, thalidomide, interleukin-12, and metalloprotease inhibitors, and a predetermined anti-cancer drug.
5. A method of treating a tumor and facilitating visualization of remission of the tumor responsive to treatment, comprising :
 - (a) locating an artery which carries a major portion of blood supply to

said tumor and is adjacent to the tumor;

- (b) obtaining an initial radiographic image of the tumor region;
- (c) injecting into the located artery a mixture of at least
 - (i) an oily lymphographic agent as a carrier containing one or more of anti-angiogenic substance(s)
 - (ii) a lithium salt solution of at least one polyunsaturated fatty acid chosen from linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid and cis-parinaric acid
- (d) obtaining second and subsequent radiographic images of the tumor region after predetermined lapses of time; and
- (e) comparing the initial radiographic image with the second and subsequent images to assess an extent of remission of the tumor.

6. A method as in claim 5 wherein step (c) comprises intra-arterially injecting a mixture containing element/s chosen from : an anti-

angiogenic substance naturally as a protein, platelet factor-4, TNP-470, thalidomide, and interleukin-12, causing anti-angiogenic action by inhibiting the blood supply to the tumor, wherein further the oily lymphographic agent acts as a carrier for said anti-angiogenic substance(s), and also for the lithium salt solution of predetermined quantities of gamma-linolenic acid, eicosapentaenoic acid and/or docosahexaenoic acid.

7. A method of treating a cancerous tumor, comprising

- (a) using an oily lymphographic agent as a carrier for
 - (i) at least one polyunsaturated fatty acid chosen from a lithium salt of at least one of linoleic acid, gamma-linolenic acid, dihomo-gamma-linolenic acid, arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid, docosahexaenoic acid, and cis-parinaric acid
 - (ii) one predetermined anti-cancer drug, and anti-angiogenic substance(s) which are mixed with polyunsaturated fatty acids or co-valently linked to fatty acids

(b) administering a predetermined quantity of selected fatty acids and predetermined anti-angiogenic substance in the oily lymphographic agent as a carrier.